REMARKS

Claims 1-25 were objected because claims 1 and 21 contain a parenthesis. The Examiner asserts that the use of parenthesis is "improper because the parenthesis is used [sic] only for reference characters," citing MPEP 608.01(M). Applicants respectfully traverse.

While the MPEP 608.01(M) section contains a statement to the effect that the use of parenthesis should be used to enclose reference characters, that does not make the statement into one that *disallows the use of parenthesis elsewhere*. Applicants believe that the use of parenthesis that follows a phrase and which obviously contains an abbreviation for the preceding phase does not raise any ambiguity in the claims because it is a perfectly conventional method for introducing abbreviations and, therefore, the claim complies with the statute.

Claims 41-45 were rejected under 35 USC 102 as being anticipated by Lichtman et al, US Patent 7,072,584 (henceforth, the '584 patent). Applicants respectfully traverse.

Claim 41 specifies a method that is executed in a node of a specified hardware arrangement. The hardware arrangement specifies a network that includes nodes, and links that interconnect the nodes. Each node includes a traffic element, and that traffic element includes a tunable transceiver that includes at least one local port and at least two non-local ports. Applicants note that the claim later mentions local ports A and B, so claim 41 is amended to mention those ports in the preamble as well, but that is not an outstanding issue, and Applicants respectfully submit that the correspondences asserted by the Examiner fail.

- For the network defined in claim 41, the Examiner points to FIG. 3 of the '584 which describes a hub. A hub is NOT a network. Thus, the correspondence asserted by the Examiner fails.
- For the nodes defined in claim 41, the Examiner also points to line cards of the hub.

  Assuming, arguendo, that a hub may be considered a network, applicants accept that asserted correspondence, except that for this asserted correspondence to stand it is required that the line cards be interconnected by "links." In the cited FIG. 3 of the reference, the cards are NOT interconnected. Each of them is connected to

an electronic switch fabric and each of them is also connected to a different 1x2 coupler switch. Since the line cards are not *interconnected*, the correspondence asserted by the Examiner fails.

- The Examiner asserts that the "links" that interconnect the "nodes" find correspondence in links 82 and 84. Elements 82 and 84 indeed are links but they are NOT connected to the line cards. Again, the correspondence asserted by the Examiner fails.
- The Examiner asserts that the "traffic element" of claim 41 finds correspondence in a "data traffic;" but traffic is NOT an element. Here, too, correspondence asserted by the Examiner fails.
- The Examiner asserts that the tunable transceiver that is included in the traffic element within the node finds correspondence in element 86 of the hub. While it is true that element 86 can be viewed as a "tunable transceiver," element 86 is NOT within what the Examiner asserts corresponds to the "node," i.e., a line card. Hence, element 86 cannot correspond to the tunable transceiver of claim 41. Yet again the correspondence asserted by the Examiner fails.
- Regarding the "local ports" of a "controllable optical director," the Examiner points to the lead in FIG. 3 that goes to the 1x2 coupler switches. The Examiner asserts that the coupler switch corresponds to the "controllable optical director;" but since claim 41 also specifies non-local ports of the "controllable optical director," and the Examiner points to "ports at Mux 78," in the interest of expedited prosecution applicants are willing to accept a slightly modified assertion, that of the collection of coupler switches and the Mux/Demux elements 78 together form a "controllable optical director."

Thus, as far as the assertions of correspondence of elements, it seems that all but the last assertion fail.

As for the method steps, which as specified in claim 41, are executed in each node in the claim 41 arrangement, there are two provisioning steps pertaining to the controllable optical director, and two pertain to the tunable transceiver that is within the node.

Considering that the Examiner asserts the line cards to correspond to the "nodes," applicants note that no method steps are executed in the line cards. In effect the Examiner admits this fact because the Examiner recognizes that the element that controls that which the Examiner asserts to be the "controllable optical director" is electronic switch fabric 72 of FIG. 3, which the Examiner has NOT asserted to be any element of the arrangement specified in claim 41. Hence, the assertion regarding the element that executes the method also fails.

Respectfully, applicants believe that the Examiner could have set forth a set of assertions that would result in a much closer correspondence to claim 41; and in the interest of a full cooperation toward the goal of patenting the instant invention, applicants take the "devil's advocate" position by suggesting the following correspondences:

1. Hub 70 is an element in a larger setting of hubs that are interconnected by links (such as line 82 and 84) and therefore the entire hub corresponds to a "node;"
2. This node includes a "tunable transceiver 86;" and
3. This node also includes a "controllable optical director" in the form of the interconnected collection of coupler switches 76 and mux/demux elements 78.

Even with this (more challenging) set of assertions, it is respectfully submitted that a close review of the reference's teachings and the claim 41 limitations (presented below) leads to the conclusion that claim 41 is not anticipated by the reference.

According to the teachings in the reference, a data traffic signal is chosen to be outputted on a particular port of the electronic switch fabric, and the choice so made dictates the wavelength of the optical signal onto which the data is modulated. Other data traffic signals, if any, are modulated on other wavelengths and, thus, there may be N optical data streams. Each of the optical data streams is applied either to one mux element 78 or to the other mux element 78 (there are precisely two of them), and thus streams are cast onto the East link or the West link. The number of optical streams cast onto the East and the West links via elements 78 is at most N.

Separately, element 86 receives a data steam from element 72 and generates an optical signal having a provisioned wavelength. That signal is routed to either the West link or to the East link, by adding the signal of element 86 (via switch 92) to the signal from mux elements 78 (in couplers 80).

In the opposite direction, an incoming signal is split and the split portions are applied to elements 78 and to coupler switch 92, respectively. Switch 92 applies the received portion to element 86 where a provisioned wavelength is culled out (by filter 90). As for the portion received by elements 78, the signals either from the East link or the West link are selected by coupler switches 76, which signals are of a particular and fixed wavelength for each coupler.

Armed with understanding of the teachings in the reference, a review of claim 41 limitations proceeds.

Claim 41 specifies a step of '

> provisioning in regards to wavelength said controllable optical director to transfer signals of wavelength X that arrive at a first of said non-local ports, to local port A of said local ports

This statement means that, in order for the reference to correspond, the transfer from a port of one of the elements 78 on the side of the East and West links, must be provisioned as to wavelength of the signal that arrives at some specified port on the side of the line cards. For example relative to some local port A at some line card, with provisioning "a" the port would output a signal of wavelength X to its connected line card, while with provisioning "b" the port would output a signal of wavelength Y to its connected line card. In the reference, in contra distinction, no element in the "controllable optical director" is provisioned "*in regards to wavelength*," and moreover, the wavelength of the signal that arrives at some local port A is always fixed at a predetermined wavelength. Thus, the first provisioning step of claim 41 is not found in the reference.

Claim 41 also specifies the step of

> provisioning in regards to wavelength said controllable optical director to transfer signals of wavelength Y from local port B of said local ports to a second of said non-local ports;

Again, it is respectfully submitted that the reference does not execute a step of provisioning anything *in regards to wavelength*. The Examiner points to the passage at col. 9, lines 40-60 and to FIG. 3, but neither the cited passage nor FIG. 3 describe such a step. If the Examiner disagrees, applicants respectfully invite the Examiner to quote the test on which the Examiner is relying. In short, applicants believe that the second provisioning step of claim 41 is also not found in the reference.

Claim 41 further specifies the step of

> provisioning in regards to wavelength said tunable transceiver to regenerate information contained in signals of wavelength X that arrive at said local port A.

That means that the tunable receiver accepts signals at local port A, and regenerates information that is contained in the accepted signals in wavelength X (in contrast to information at other wavelengths, if any). However, the tunable transceiver of the reference does not receive signals from any local port of the "controllable optical director" so it cannot regenerate the information in such signals, regardless of wavelength. Thus, the third provisioning step of claim 41 is not found in the reference.

Lastly, claim 41 specifies the step of

> provisioning in regards to wavelength said tunable transceiver to regenerate information contained in signals of wavelength X that arrive at said local port B.

The remarks above apply to this clause as well.

In short, even with a set of assertions that is more challenging than the assertions made by the Examiner, it is respectfully submitted that none of the steps specified in claim 41 is described by the reference and, therefore, claim 41 is not anticipated by the '584 reference. Claims 42-45 depend on claim 41 and, therefore, they are also not anticipated by the '584 reference.

Claims 1-15, 18 and 19 were rejected under 35 USC 103 as being unpatentable over Way et al, US Patent Application Publication No. 20060275034 in view of Liu et al, US Patent Application Publication No. 2002/0149820. Applicants respectfully traverse.

Claim 1 specifies a transceiver pool and an optical director. The Examiner asserts that the transceiver pool of claim 1 corresponds to elements 528 of the Way et al reference, that elements 530 and 534 correspond to the transceivers of the Way et al reference, and that the optical director corresponds to element 556 of the Way et al reference. The Examiner also asserts that leads 576, 578, and 574 correspond to the local input ports of claim 1. These references are found in FIGS 6a and 6b.

Respectfully, the latter correspondence fails as to leads 576 and 578 because they connect to element 516, and not to element 528, whereas claim 1 specifies the each local input ports is "connected to one of said ODS connection points," and the ODS connection points are connection points of the transceiver pool. Thus, according to the Examiner's assertions as to what is the transceiver pool and what is the optical director, the

arrangement has **only one** "local input point." Claim 1, in contradistinction, specifies local input ports (in the plural).

Further in connection with the optical director, the optical director consists of two 1x2 switches (560 and 562), each of which has one input and two outputs. Both the inputs and the outputs of the switches are distinct from each other, and all of the signal paths are uni-directional.

Operationally, switch 560 sends signals that are received at input 574 to either communication ring 512 or ring 514, and switch 562 accepts signals from one of same two communication rings and sends the accepted signal to output 580.

Claim 1 specifies that the optical director is adapted to

> add a signal applied to one of said local input ports by a connected ODS connection point, which is at said particular wavelength, to a specific one of the other ports, via all optical paths.

Element 528 meets this limitation, in that it is adapted to connect a signal at wavelength $\lambda 1$ arriving on path 574 to either output 570 or to output 572. However, claim 1 also specifies that the optical director does the above

> without affecting signals of other wavelengths that are applied by the optical director element to said specific one of the other ports

and element 528 fails to do that because there are no signals of other wavelengths that are applied by the optical director element to either output 570 or output 572. Therefore in the final analysis, element 528 fails to meet the claim's limitation.

The Examiner points to lead 580, but that is not a port to which a signal is applied by a local input port (please see the discussion above) and moreover, it does not **add** a signal to other signals. The only action that takes place is the transfer of whatever is presented at the appropriate input to switch 562 (either input 578 or input 576) to the switch's output 580. As an aside, the Examiner's comments about wavelength $\lambda 2$ are incorrect because claim 1 specifies that the lack of effect on other wavelengths pertains to the port to which the signal of the particular wavelength is added. To conclude, it is respectfully submitted that claim 1 is not taught by the Way et al reference, independently of the issue that Way et al do not teach an electrical control signal – in connection with which the Liu et al reference is cited. Consequently, it is respectfully

submitted that claim 1 is not obvious in view of the Way et al and Liu et al combination of references.

Claims 2-15, 18 and 19 depend on claim 1 and, therefore, it is respectfully submitted that these claims are also not obvious in view of the Way et al and Liu et al combination of references.

It may be noted that claim 1 is amended herein, obviously this amendment is not made in an effort to overcome the prior art – since its substance is not even addressed in these remarks.

Claims 16, 17, and 20-29 were rejected under 35 USC 103 as being unpatentable over Way et al in view of Gumaste et al, US Patent Application Publication No. 2004/0208560. Applicants respectfully traverse.

Regarding claim 16, the Examiner states that Way teaches a control signal, pointing to the Examiner's earlier remarks. The Examiner's earlier remark about the control signal is found in segment 12(1) of the Office Action Remarks, where the Examiner states "pursuant to a control signals (converted OEO) applied to the optical director element (556)." As best understood, this is NOT what the reference teaches. Actually, the sole mention in Way et al of a control signal is found in paragraph 78, pertaining to FIG. 7(a), where it says:

> In the event of a break in a fiber 612 or 614, a WDM transponder senses the loss of optical power or a high bit error rate, and sends a control signal to trigger the **local** 1x2 switch 616 to switch to a different port, as shown in FIG. 7(b). (emphasis supplied)

No WDM transponder is shown in either FIG. 7(a) or FIG. 7(b), but according to other teachings in the Way et al reference, element 528 (FIG. 6(a)) is a WDM transponder. So, what the above-quoted passage teaches is that element 528 controls element 560 (somewhat akin to what the Examiner asserted). How that control signal is generated, how it is applied, what form it has (e.g., optical or electrical) is NOT known. *What is, however, known, is that the control signal is totally local.* No management network is necessary for communicating control signals from the network to the respective optical directors. Claim 16, in contradistinction, claims a management network for communicating the control signals. Since no such management network exists in the Way et al reference, and since no such management network would be useful, it is

respectfully submitted that claim 16 is not obvious in view of Way et al reference combined with the Gumaste et al reference, even if Gumaste et al do teach a management network.

Claim 17 depends in claim 16 and, therefore, it is respectfully submitted that claim 17 is also not obvious in view of Way et al reference combined with the Gumaste et al reference, even if Gumaste et al do teach a management network.

As for claims 20-29, the Examiner makes no reference to the Gumaste et al patent in any of the remarks regarding theses claims, but only to the Liu et al patent. It appears, therefore, that the rejection of claims 20-29 should have been in view of Way et al and Liu et al (same as the rejection of claims 2-15, 18 and 19).

Claim 21 is an independent claim. The Examiner asserts that the tuning step of claim 21 is met by the teachings in paragraph [0013]. Applicants respectfully disagree. Paragraph [0013] teaches that the line-side receiver includes a fixed or a tunable optical wavelength filter. It does not teach how that tunable optical filter is controlled. Elsewhere in the reference, however, as discussed above and quoted from the reference, it is taught that the control is local – between element 528 and element 556. In contradistinction, claim 21 specifies a network of nodes and links, and that the network receives control signals. Clearly, that does not mean that the node generates its own control signals, as is the case in Way et al. Therefore, the asserted correspondence fails.

Additionally, claim 21 specifies

> tuning a first transceiver pool to deliver an information-bearing signal at one of N optical Director Side (OSD) connection points associated with said first transceiver pool (local ports), where N is a non-zero integer greater than one. (emphasis supplied)

However, the **only** ODS connection point that is associated with the optical director and which can accept information from the transceiver pool is connection 574. Since there is only one such connection point, and claim 21 explicitly specifies that N is greater than one, it follows that the correspondence again fails. In other words, the Way et al reference clearly does not have the step of tuning as defined in claim 21 and, consequently, claim 21 is not taught by Way et al.

Regarding the network-provided control signals, the Examiner points to the Liu et al reference, but there is absolutely no reason or condition that exists in the Way et al

arrangement that would suggest replacing the local control signal that is taught by Way et al with the control arrangement of Liu et al. In other words, Liu et al teaches nothing relative to control signals that reasonably may be combined with the teachings of Way et al and, therefore, it is respectfully submitted that claim 21 is not obvious in view of the Way et al and Liu et al combination of references.

Claims 22-25 depend on claim 21 and they also are not obvious in view of the Way et al and Liu et al combination of references.

Claim 26 is another independent claim. It specifies, inter alia, that the control signal is "other than indicative of a failure condition." In Way et al, the control signal is precisely the opposite. That is, it occurs only upon a failure condition. It must be noted that Way et al teaches a ring arrangement. That means that absent a failure condition, a signal that is injected into the clockwise ring, or into the counter-clockwise ring, will reach each and every node. Hence, there is no need to do any switching or any controlling. Only when a failure condition occurs a need arises to do some controlling. The Examiner cited the Liu et al reference for its teaching of control signals that are not indicative of a failure condition. Even if Liu et al did teach that, it is respectfully submitted that there is absolutely no need, no benefit would accrue, and it makes no technical sense to use the control signals of Liu et al in place of the control signals of Way et al. Therefore, it is respectfully submitted that, at least in connection with claim 26 and the teachings of Liu et al that the Examiner proposes to import to Way et al, it makes no sense to combine the two references. Applicants respectfully submit that claim 26 is not obvious in view of Way et al and Liu et al combination of references.

Claims 27-29 depend on claim 26 and they also are not obvious in view of the Way et al and Liu et al combination of references.

Claims 30-40 were rejected under 35 USC 103 as being unpatentable over Way et al in view of Liu et al and further in view of Okanoya et al, US Patent 6,128,657. Applicants respectfully traverse. Claims 30-40 depend on claim 26, and the Okanoya et al reference does not teach that which is missing in Way et al and Liu et al relative to claim 26. What that means that claim 26 is not obvious in view of the combination of Way et al, Liu et al, and Okanoya et al and, consequently, claims 30-40 are also not obvious in view of the combination of Way et al, Liu et al, and Okanoya et al.

In light of the above amendments and remarks, applicants respectfully submit that all of the Examiner's objections and rejections have been overcome. Reconsiderations and allowance are respectfully solicited.

Respectfully,
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Dated: 12/28/07

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